

IN THE CLAIMS:

1. (Currently Amended) An apparatus for reflecting an incident millimeter-wave beam comprising:

a first layer of dielectric material adapted to receive and partially transmit said incident millimeter-wave beam; and

one or more additional layers of dielectric ~~materials~~ material disposed in alignment with said first layer, each additional layer partially transmitting a wave received through a previous layer, and

spacers disposed between said layers of dielectric materials to maintain air layers of predetermined uniform thickness between adjacent layers of dielectric material,

wherein a thickness of each dielectric layer and thickness of each air layer being such that waves of said millimeter-wave beam substantially cancel in the forward direction.

2. (Original) The invention of Claim 1 wherein said dielectric materials are optically transparent.

3. (Canceled)

4. (Currently Amended) The invention of Claim 32 wherein said ~~first~~ dielectric material is optical sapphire.

5. (Canceled)

6. (Original) The invention of Claim 4 wherein the number of sapphire layers is seven with six layers of air in between.

7. (Original) The invention of Claim 6 wherein outer sapphire layers have a nominal thickness of 70.8 mils, inner sapphire layers have a nominal thickness of 30.4 mils, and air layers have a nominal thickness of 32.0 mils.

8. (Canceled)

9. (Currently Amended) The invention of Claim 81 wherein said spacers include vents for removing gaseous contaminants.

10. (Currently Amended) The invention of Claim 51 wherein said apparatus further includes a sealed housing.

11. (Original) The invention of Claim 10 wherein said sealed housing is filled with dry nitrogen.

12. (Original) The invention of Claim 10 wherein said sealed housing includes a gas fill port for inputting gas.

13. (Original) The invention of Claim 10 wherein said sealed housing includes a gas exhaust port for outputting gas.

14. (Original) The invention of Claim 10 wherein said sealed housing includes baffles for directing the flow of gas.

15. (Previously Amended) An apparatus for reflecting an incident millimeter-wave beam comprising:

a first layer of dielectric material adapted to receive and partially transmit said incident millimeter-wave beam;

one or more additional layers of dielectric materials disposed in alignment with said first layer, each additional layer partially transmitting a wave received through a previous

layer and a thickness of each layer being such that waves of said millimeter-wave beam substantially cancel in the forward direction;

a sealed housing for said layers with a gas fill port, a gas exhaust port, and baffles for directing gas flow;

a T and filler valve attached to said gas fill port;

a pressure gauge attached to a first nozzle of said T and filler valve;

dry nitrogen applied to a second nozzle of said T and filler valve; and

a cutoff exhaust valve attached to said gas exhaust port.

16. (Currently Amended) A method for reflecting an incident millimeter-wave beam including the steps of:

receiving said incident millimeter-wave beam with a first layer of dielectric material which partially transmits said wave and

propagating said transmitted wave through one or more additional layers of dielectric materials material disposed in alignment with said first layer, said dielectric layers separated by air layers having a thickness maintained by spacer, wherein a thickness of each dielectric layer and each air layer being such that waves of said millimeter-wave beam substantially cancel in the forward direction. further including the step of partially transmitting through each additional layer a wave received through a previous layer whereby waves transmitted therethrough substantially cancel in the forward direction

17. (Canceled)